

**Notice of Allowability**

Application No.

09/901,866

Applicant(s)

FOSCHINI ET AL.

Examiner

Lawrence B. Williams

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 22 November 2005.
2. ☒ The allowed claim(s) is/are 1-28, 30-41, 44-54, renumbered as 1-28, 29-40, 41-54, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|   | 9. <input type="checkbox"/> Other _____  |

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John E. Curtin on 24 January 2006

The application has been amended as follows:

- a.) In claim 17, line 3, change "the respective" to "a respective".
- b.) In claim 30, line 8, insert "of" between "plurality" and "sub-stream" and change "component" to "components"
- c.) In claim 31, line 3, "one" before "sub-stream".

### **REASONS FOR ALLOWANCE**

1. The following is an examiner's statement of reasons for allowance: The instant application discloses a method and apparatus for increasing the capacity of a multiple- input and/or multiple-output system. A search of prior art references has failed to disclose a method comprising the steps of:

“transmitting at least a portion of a processed sub-stream, the processed sub-stream representing one of the plurality of sub-streams, the processed sub-stream including a plurality of strata, each stratum of the processed sub-stream representing a respective sub-stream component of the one sub-stream” as disclosed in claim 1.

“transmitting at least a portion of each of a plurality of processed sub-streams, each one of the processed sub-streams representing a respective one of the sub-streams, each processed sub-stream including a plurality of strata, each stratum of each processed sub-stream representing a respective one of the sub-stream-components of one of the component data streams represented by that processed sub-stream “ as disclosed in claim 10.

“(a) decoding at least a portion of one of the strata to obtain at least a portion of a respective sub-stream component, the decoding step further comprising separating out and decoding the portion of the stratum to obtain the sub-stream component portion; (b) removing the decoded portion of the one stratum from the received signal, the removing step further comprising re-encoding the

decoded portion to obtain the one stratum and subtracting the re-encoded stratum from the received signal; and (c) decoding at least a portion of another of the strata to obtain at least a portion of a respective sub-stream component” disclosed in claim 20.

Nor does the prior art disclose “a transmitter for use in a system adapted to communicate at least a portion of a primitive data stream, the primitive data stream including a plurality of sub-streams, the transmitter comprising: a first stratifier that stratifies one of the component data streams into a processed sub-stream, the processed sub-stream component having a plurality of strata, each stratum of the processed sub-stream representing a respective one of a plurality of sub-stream components of the one sub-stream” as disclosed in claim 30.

Nor does the prior art teach a receiver comprising; “a processor having an input coupled to the outputs of the receive antennas, the processor operable to receive a signal from the receive antenna signals, and comprising: a strata processor operable to decode at least a portion of one of the strata by separating out and decoding the portion to obtain at least a portion of a respective sub-stream component; an encoder/modulator operable to remove the decoded portion of the stratum from the receive signal and to re-encode the decoded sub-stream component to obtain the respective stratum; and a combiner for subtracting any re-encoded stratum from the received signal, the processor further operable to decode at least a portion of another of the strata to obtain at least a portion of a respective sub-stream component” as disclosed in claim 41.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### CONCLUSION

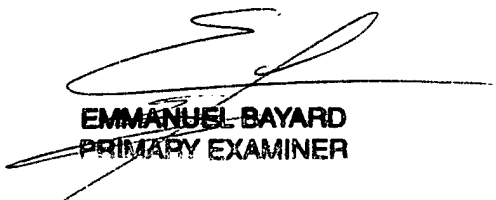
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw  
January 24, 2006

  
**EMMANUEL BAYARD**  
**PRIMARY EXAMINER**